AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method comprising:

preparing a bonding surface of a heat dissipating member by removing an oxidation layer from the bonding surface and plating the bonding surface with at least one wetting layer; and

bonding a metallic solder thermal interface material ~~including a metallic solder~~ to the bonding surface, the thermal interface material to thermally couple the heat dissipating member to a heat conducting component by an impermanent attachment, the thermal interface material having a melting point of 200°C or less and having a phase change temperature within a range of operating temperatures of a thermally coupled component, the metallic solder thermal interface material comprising indium or an alloy thereof, the bonding including:

providing ~~at least~~ a solid piece of the thermal interface material in a vacuum chamber under vacuum conditions, ~~and~~

heating the thermal interface material to a temperature below an oxidation temperature of metal in the vacuum and providing a pressurized inert atmosphere in the vacuum chamber to form liquid metallic solder such that gravity reflows the liquid metallic solder over the bonding surface, the pressurized inert atmosphere being from about 15 to about 40 pounds per square inch (p.s.i.), and

applying a force to the heat dissipating member to compress the heat dissipating member against the thermal interface material.

2. (Original) The method of claim 1, wherein the bonding of the thermal interface material is achieved without using a solder flux.

3. (Original) The method of claim 1, wherein the bonding of the thermal interface material comprises forming an intermetallic bond.

4. (Canceled)

5. (Currently Amended) The method of claim [[4]] 1, wherein the at least one wetting layer comprises one of gold (Au) and nickel (Ni).

6-7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the heat dissipating member comprises one of copper (Cu) and aluminum (Al).

9. (Original) The method of claim 1, wherein the bonding comprises:

reflowing the metallic solder on at least a portion of the bonding surface to form a liquid metallic solder layer; and

allowing the liquid metallic solder layer to cool to a temperature of less than the melting point of the metallic solder.

10. (Previously Presented) The method of claim 1, wherein the bonding comprises:

placing the metallic solder and the heat dissipating member into the vacuum chamber;

placing the vacuum chamber under vacuum conditions;

heating the metallic solder to a temperature of greater than or equal to the melting point of the metallic solder to form the liquid metallic solder; and

disposing the liquid metallic solder on at least a portion of the bonding surface to form a liquid metallic solder layer.

11. (Previously Presented) The method of claim 10, wherein the bonding further comprises providing a first inert environment in the vacuum chamber after placing the vacuum chamber under vacuum conditions.

12. (Currently Amended) The method of claim 11, wherein providing the pressurized inert atmosphere in the vacuum chamber ~~is provided~~ after providing a first inert environment in the vacuum chamber.

13. (Canceled)

14. (Previously Presented) The method of claim 12, wherein the bonding further comprises:

allowing the liquid metallic solder layer to cool to a temperature of less than the melting point of the metallic solder; and

removing at least a portion of the second pressure environment from the vacuum chamber.

15. (Currently Amended) A method comprising:

removing an oxidation layer from a bonding surface of a heat dissipating member;

placing a metallic solder and ~~a~~ the heat dissipating member ~~having a bonding surface~~ into a vacuum chamber, the metallic solder comprising indium or an alloy thereof;

placing the vacuum chamber under vacuum conditions by removing oxygen gas from the vacuum chamber to inhibit oxidation;

heating the metallic solder to a temperature of greater than or equal to the melting point of the metallic solder to form a liquid metallic solder, the heated temperature being about 10°C to about 300°C;

after heating the metallic solder, purging the vacuum chamber of oxygen gas and providing a pressurized inert atmosphere in the vacuum chamber, the pressurized inert atmosphere having a pressure of from about 0 to 100 pounds per square inch (p.s.i.);

~~disposing~~ providing the liquid metallic solder on at least a portion of the bonding surface to form a liquid metallic solder layer;

removing at least a portion of the pressurized inert atmosphere from the vacuum chamber; ~~and~~

allowing the liquid metallic solder layer to cool to a temperature of less than the melting point of the metallic solder; and

applying a force to the heat dissipating member to compress the heat dissipating member against the metallic solder.

16. (Original) The method of claim 15, wherein the metallic solder comprises a fluxless metallic solder.

17. (Previously Presented) The method of claim 15, further comprising providing a wetting layer including one of a gold (Au) plating and a nickel (Ni) plating on the bonding surface prior to placing the heat dissipating member into the vacuum chamber.

18-30. (Canceled)

31. (Currently Amended) A method comprising:

removing an oxidation layer from a bonding surface of a heat dissipating device;

providing a solid piece of metallic solder in a vacuum chamber under vacuum conditions by at least removing ~~an amount of~~ oxygen gas from the vacuum chamber to inhibit oxidation, the metallic solder comprising indium or an alloy thereof;

heating the solid piece of the metallic solder to at least a melting temperature of the metallic solder while in the vacuum chamber;

after heating the metallic solder, providing a pressurized inert atmosphere in the vacuum chamber while the metallic solder is in the vacuum chamber, the pressurized inert atmosphere having a pressure from about 0 to 100 pounds per square inch (p.s.i.);

~~providing~~ bonding the heated metallic solder onto ~~a~~ the bonding surface without using a solder flux while the metallic solder is in the vacuum chamber; ~~and~~

allowing the heated metallic solder to cool to a temperature less than the melting point of the metallic solder; and

applying a force to the heat dissipating device to compress the heat dissipating device and the metallic solder.

32. (Previously Presented) The method of claim 31, wherein the inert atmosphere comprises a nitrogen atmosphere or an argon atmosphere.

33-34. (Canceled)

35. (Previously Presented) The method of claim 31, further comprising removing at least a portion of the inert atmosphere from the vacuum chamber.

36. (Canceled)

37. (Previously Presented) The method of claim 1, wherein the bonding includes providing an inert environment in the vacuum chamber prior to heating the thermal interface material.

38. (Previously Presented) The method of claim 37, wherein the bonding further includes providing a pressurized environment in the vacuum chamber after providing the inert environment.

39. (Previously Presented) The method of claim 38, wherein the bonding further includes providing the liquid metallic solder on the bonding surface.

40. (Previously Presented) The method of claim 39, wherein the bonding further includes removing at least a portion of the inert atmosphere from the vacuum chamber.

41. (Previously Presented) The method of claim 40, wherein the bonding further includes allowing the liquid metallic solder layer to cool.

42. (Previously Presented) The method of claim 15, wherein the placing the vacuum chamber under vacuum conditions includes removing a portion of an initial atmosphere from the vacuum chamber.

43. (Canceled)

44. (New) The method of claim 31, wherein the oxidation layer is removed by chemically or mechanically cleaning the bonding surface.

45. (New) The method of claim 1, wherein the oxidation layer is removed by chemically or mechanically cleaning the bonding surface.

46. (New) The method of claim 15, wherein the oxidation layer is removed by chemically or mechanically cleaning the bonding surface.